SMOKE FLIES

In an interesting paper entitled "American Smoke Flies (Microsania: Clythiidæ)," published in The Wasmann Collector, Vol. 7, No. 1, p. 23–30, March, 1947, Edward L. Kessel describes the behavior of *Microsania occidentalis* Malloch to smoke and summarizes the observations of English and European entomologists on other species of smoke flies. Mr. Kessel's observations in California are apparently the first to be made in America relative to the response of an American species of Microsania to smoke. He describes the dancing of *M. occidentalis* in large numbers in the thick smoke above a chimney and reports other observations bearing on the positive response of this species to smoke.

Wood smoke consists mainly of carbonic acid and water mixed with finely divided carbon. When wood is burned the hydrocarbons are distilled off as gases and burn to CO_2 and steam if the air supply is ample and the temperature is high. If mixed with cool air and chilled below the ignition temperature they will pass off unburned.

One wonders if the flies are positively chemotropic to CO_2 and if so, why? Carbon dioxide, because it raises the rate of respiration in insects is sometimes mixed with fumigants and in humans the rate of the heart action is regulated by the CO_2 content of the blood. Perhaps the attraction is not CO_2, but other volatile products of the combustion of such things as gums, tannin, oils, etc. It would be of interest to know the correct answer.—H. B. W.